

# Issues in Contemporary Metaphysics

## Lecture 2: Universals and Properties

### 1. Motivation for Properties I: Abstract Reference

‘All footballs are round’  $\forall x (Fx \rightarrow Gx)$

‘The prime minister is Scottish’  $\exists x (Fx \& Gx)$

‘There’s something over there, and it’s either blue or pink’  $\exists x (Fx \vee Gx)$

So simple sentences like that don’t (*under the Quinean theory of ontological commitment*) commit us to the existence of properties. We’ll see, when we turn to the problem of universals, that not everyone agrees this is true. But for now, let’s just examine things from the Quinean point of view. Given *those* sentences there is no commitment to properties. All we commit to are material objects, and then say how they are. There’s no commitment to properties as well.

Let’s try some harder ones.

(1) ‘Your car and my car are both blue’

Slightly harder, but still pretty easy. Let F be ‘\_\_ is blue’

(1\*)  $\exists x \exists y (x = \text{my car} \& y = \text{your car} \& Fx \& Fy)$

But now try:

(2) ‘Our cars are the same colour’

Can’t use (1\*), as (2) could be true even though our cars aren’t blue. They could both be yellow. Perhaps make it a disjunctive paraphrase?

$(x \text{ is blue} \& y \text{ is blue}) \vee (x \text{ is red} \& y \text{ is red}) \vee (x \text{ is yellow} \& y \text{ is yellow}) \dots$

Of course, even this won’t work! Imagine I asked you to paint some cars. You paint one azure, and the other Alice Blue. That’s pretty different, but they’re both blue. Clearly two cars painted like that won’t, in most contexts, ‘be the same colour’. So the paraphrase must be extended even more! A disjunct for every *shade* of blue (and red! And yellow! And green!) And of course, even then there will be different hues of Azure that differ. There are infinitely many different hues of colour!

(2\*)  $\exists x \exists y (x = \text{my car} \& y = \text{your car} \& [(x \text{ is colour \#1} \& y \text{ is colour\#1}) \vee (x \text{ is colour \#2} \& y \text{ is colour\#2}) \vee (x \text{ is colour \#3} \& y \text{ is colour\#3}) \vee (x \text{ is colour \#4} \& y \text{ is colour\#4}) \vee (x \text{ is colour \#5} \& y \text{ is colour\#5}) \vee (x \text{ is colour \#6} \& y \text{ is colour\#6}) \vee (x \text{ is colour \#7} \& y \text{ is colour\#7}) \vee (x \text{ is colour \#8} \& y \text{ is colour\#8}) \vee (x \text{ is colour \#9} \& y \text{ is colour\#9}) \vee (x \text{ is colour \#10} \& y \text{ is colour\#10}) \vee \dots ])$

This attempt to live without properties, and instead offer paraphrases, is called austere nominalism (sometimes ‘ostrich’ or ‘mirage’ nominalism). So austere nominalists *can* give a paraphrase for that sentence. But it’s infinitely long, and contains an infinite number of colour predicates.

### 2. Tangent I: Theory Choice

We look at the *costs* and the *benefits* and then do the ‘cost/benefit analysis’. Here’s some examples of what to weigh the costs and benefits of a theory on:

*Criterion One: Avoid Paradoxes and Cohere with Intuitions*

If P and Q entail a contradiction, you need a theory that either misses out P or Q, or explains how they don’t entail a contradiction. Such paradoxes (the NSE paradox) plague those who believe in properties, and there are alleged paradoxes about material objects (statue/clay).

A good theory will also cohere with things we *know* to be true (by necessity). And it’s generally *better* for it to cohere with things we *intuitively think* to be true.  $2+2=4$  should be true! Pockets should have holes! Some things are cars, or are blue! Blue is a colour! Of course, we *can* make sacrifices – this is philosophy after all. And some things are always ‘up for grabs’

Compare with ethics. A theory is *awful* if it says torturing five year olds for pleasure is fun. A theory has *issues* (but still believable) if it says you have to give up on some minor ethical belief – say that speeding drivers are morally on a par with those who run over people. Sometimes we take these issues to be big enough to think the theory unbelievable. Alternatively we might take those issues as generating *results*.

So we might take that issue as being a result of the theory. Similarly in metaphysics. Theories that cohere with intuition are better than those that don’t. And some intuitions are more deeply held than others. So contradicting *certain* intuitions is more *costly* than contradicting certain other intuitions.

### Criterion Two: Explanatory Power

Not only should your theory cohere with things we generally think to be true, it should *explain* other truths. But *some* truths will be *inexplicable*. They will not be explained by other truths in your theory – they are *brute truths*. It's generally thought to be a virtue for your theory to have as few brute truths as possible. In having less brute truths it has more *explanatory power*, and offers explanations where weaker theories just state things as inexplicable fact.

### Criterion Three: Parsimony

Sometimes called 'Ockham's Razor'. It's a benefit to have fewer things in your theory. If you've got two exactly equivalent theories, say they *both* explain *exactly* the same things, but one has more things in it than the other, it's clear you should choose the more parsimonious theory.

### Criterion Four: Theoretical Simplicity

Not only do we favour theories which are *economical* and have *explanatory power* we favour theories which are *simple*. Usually, this simplicity is captured by having few *primitives*. A 'primitive' of a theory is a undefinable predicate. The consensus is that having *less* primitives is a good thing. In the same way that taking brute truths is a cost, taking on primitives is a cost. It means your theory is more complex.

### The Cost/Benefit Analysis

The idea is that once you figure out how a theory scores on these sorts of criterion (*those listed are not exhaustive!*) you can evaluate it. Where it does *well* on a criterion you have a *benefit*. Where it doesn't do well you have a *cost*. So the realists about properties score well on certain criteria. Their theory has one primitive: '\_\_\_ instantiates \_\_\_' So it provides the benefit of theoretical simplicity. But it populates your ontology with lots of entities – namely the properties. So it has issues with ontological parsimony.

The nominalist, however, has no properties. They have a theory that is *very* ontologically parsimonious. As they have an infinite number of primitives, their theory is *very* complicated. So much so, many people favour realism.

## 3. Other Problems for Austere Nominalism

Moreover, *even if* you are happy with that amount of primitives, there are other problems ahead. Try:

(3) Blue is a colour.

That's a bummer to paraphrase. It appears to assert  $\exists x (x = \text{blue} \ \& \ x \text{ is a colour})$ . But that's to quantify over a property! Could paraphrase it as 'Everything that is blue is coloured' Problematic in that if, by chance, all the blue objects were, say, whales then that would mean that 'Everything that is blue is a whale'

(3\*) Blue is a water borne mammal (?)

Or try:

(4) There are as yet undiscovered physical properties.

(5) Red resembles orange more than it resembles blue

If we can't paraphrase these sentences at all, we'd have a problem. I leave you to look at the literature concerning such paraphrases Although it was concerns like this that drove Quine to accept the existence of properties.

## 4. Motivations for Properties II: The Argument from Resemblance

In the literature there is often said to be 'The Problem of Universals' It is often advanced as a reason to believe in properties. Armstrong is the most famous contemporary proponent. There are lots of different interpretations of the 'Problem of Universals' Everyone agrees on one thing: it is poorly named. It's not a problem *about* universals at all! It's meant to be an argument for them!

The interpretation I'll examine (which isn't the only one!) is to think it's a problem about *resemblance* Universals are introduced to explain (or 'ground', or 'analyse') how two things can have something in common. We might also take this to mean how things can *resemble* one another. Is there a difference between those two? Well, that's just part of the problem of getting to grips with what the Problem of Universals is meant to be.

We arrange things into similarity classes.

*Example:* All the blue things are similar; all the purple things; all the men; all the women.

Some classes aren't similarity classes.

*Example:* A class with you, me, a Burmese farmer, the left hands of the entire cast of Eastenders, Brad Pitt's toilet, and the black hole Cygnus X-1.

It's not enough that things fall under the same predicate to be similar.

*Example:* x is F; y is G, define H as being the predicate of being  $F \vee G$ .

x is H and y is H, but they don't have anything in common (surely!) It's not a *real* resemblance. So we could make up a predicate that those dissimilar classes of entities fell under.

Properties would come to our rescue. Say: Not every predicate is a property. Things exactly resemble one another if and only if they have all their *properties* in common. Varying degrees of resemblance are matched by having varying numbers of properties in common. So whilst two objects both fall under the *predicate* H they may not resemble as they may still fail to have *properties* in common.

## 5. And if properties exist, what then?

### *Terminological Note*

This is where the terminology becomes rather confusing. Lots of people believe properties exist – but they *don't* call themselves realists. In fact, they often go on to call themselves nominalists. 'Realism', with regards to properties, is usually to endorse the existence of properties as 'universals'. Whereas nominalism is taken to refer both to not believing in properties *and* to believing in properties but not as these 'universals'. The term 'universal' is normally reserved for properties that exist as *sui generis* entities.

A *sui generis* entity is an entity in 'a category of its own' That is, that things from that category can't be identified with things from other categories you already accept. We'll come back to that notion in a bit.

### *Where are the universals/properties?*

If properties exist, where are they? Platonists think that the properties aren't located *anywhere*. They're abstract and outside space and time. We saw some problems with that last week.

Others say they're in space and time. Locate them where their *instances* are located. So *being a human* is located where I am. And where you are. And where every other human is. Here's the twist. Usually, such realists say the universal is *entirely* located at *each* instance. So whereas I am only *entirely* located at one place (a man shaped region), universals get to be 'multiply located'. Which is a bit weird (how can *all* of something be in exactly one place?).

*Example:* Red being 5m away from itself.

I'll leave you to look into *why* they say these things.

### *Are there uninstantiated properties?*

Platonists say yes, they're all there in Platonic heaven. Aristotelians disagree – somehow the universals depend on their being instantiated. If they do exist, where are they? If they don't exist, does that mean truths about uninstantiated properties turn out to be false?

*Example:* How can this be true:

(5) Red resembles orange more than it resembles blue

If nothing is red, orange or blue and uninstantiated universals don't exist?

### *Which predicates correspond to properties?*

But there are other problems. Not *every* predicate can correspond to a property.

*Example:* There can be no property of 'not self exemplifying'

So *which* predicates correspond to a property? What universals/properties are there? *Being a human? Being a monkey? Happy, Sad? Depressed about being dumped by a crap significant other who then went on to run away to Barbados with some girl called Julie? Red, Blue, Green? Crimson, Scarlet, Puce, Amaranth?*

Also concerns about *conjunctive, disjunctive* and *negation* properties. If *being a sword* exists and *being rusty* exists is there a separate universal of *being a rusty sword*? If *being a human* exists and *being a dog* exists is there a separate universal of *being either a dog or a human*? If *being a human* exists is there a universal of *not being a human* as well? What are the conditions for a universal/property existing?

One answer is Armstrong's. He believes in *sparse universals*. The only way to find out what universals there are is *a posteriori*. The universals that exist are those posited by our best scientific theory. So the only universals will be things like *having spin up, or being charged or having mass of 0.511 MeV*.

But if the universals are sparse, how does that deal with the motivations? 'Being annoyed is worse than being happy' is true, but apparently 'being annoyed' isn't a property. So you'll need a paraphrase! Wasn't avoiding that what realism was meant to help with? Or the 'argument from resemblance', which is Armstrong's favourite motivation. If *being a human* isn't a universal, we can't resemble one another by sharing that universal. We could resemble one another by being charged, or having the same mass in MeV, but other than that, we don't. You should go off and read how Armstrong tries to deal with this by using 'structured universals'.

## 6. Properties Without Universals ('nominalism')

Austere nominalists achieved parsimony by not believing in universals at all. The realist thus far discussed takes a hit on parsimony by introducing properties as a new category of entities. So, say, they have objects *and* properties.

But there's another way to be parsimonious *without* eliminating properties entirely. We can *identify* (alternatively, 'reduce' which may or may not be the same thing) properties to things we already believe in. For instance, to preserve various 'conservation principles' physicists believed in neutrinos – tiny little, hard to detect particles. It's also the case that there's a lot of unaccounted for matter in the universe: 'dark matter'. It's very hard to detect, but must exist for various calculations to make any sense. A proposed theory *might* say that a whole new category of entity exists – dark matter. A *more parsimonious* theory would say that the dark matter exists, but it's *just the neutrinos*. Theory one has two distinct categories of entities (neutrinos/dark matter) whilst the other theory *still has those categories*, but they're just not distinct.

In ontology, we might do the same. For instance, if you start by believing in objects you might be a realist about properties but exact parsimony by saying that properties really are just objects – 'property' is a sub-category of 'object' (and, as it's a sub-category, 'property' isn't *sui generis* – it's not in a category *of its own*). However this would be a whacky reduction. Surely properties *aren't* objects (exception: mereological nominalism / exploded object nominalism).

But maybe if our ontology had more categories of things, we could do better. For instance, if you believed in *concepts* we might be on a winner. So you have objects and then, in addition, you believe in 'concepts'. You might then identify the property *red* with the concept 'red'. And say that an object instantiates *red* if and only if it falls under that concept. These realists about properties would be often called nominalists (so they believe in properties but *not* universals, as universals have to be *sui generis*). There are serious problems with concept nominalism – I'm using it as an example to demonstrate parsimony not suggesting it's perfect. We'll see another example of nominalism next week when we introduce sets.